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IN THE CLAIMS

PLEASE AMEND THE CLAIMS AS FOLLOWS:

99. (Currently amended) A method of effecting mass analysis on an ion stream, the method comprising the steps of:

- (a) passing the ion stream through a first mass resolving spectrometer, to select parent ions having a first desired mass to charge ratio;
- (b) subjecting the parent ions to collision induced dissociation to generate fragment ions;
- (c) trapping the fragment ions and any remaining parent ions;
- (d) periodically releasing pulses of the trapped ions into a Time-Of-Flight instrument to detect ions with a second mass to charge ratio; and
- (e) providing a delay between the release of the pulses of trapped ions and initiation of pulses in the Time-Of-Flight instrument, and adjusting the delay to improve the duty cycle efficiency of ions with the second mass to charge ratio.

115. (Currently amended) A method of effecting mass analysis on an ion stream, the method comprising the steps of:

- (a) passing the ion stream through a first mass resolving spectrometer, to select parent ions having a first desired mass-to-charge ratio;
- (b) subjecting the parent ions to collision-induced dissociation to generate fragment ions;
- (c) trapping the fragment ions and any remaining parent ions;
- (d) periodically releasing pulses of the trapped ions into a time of flight instrument to detect ions with a second mass-to-charge ratio; and
- (e) providing a delay between the release of the pulses of trapped ions and initiation of push-pull pulses in the time of flight instrument, and adjusting the delay to improve the duty cycle efficiency of ions with the second mass-to-charge ratio.